

Management Accounting Practices in Universities: A Bibliometric Review and Future Research Directions

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ABSTRACT

This paper employs bibliometric methods to systematically review and analyze relevant literature on the application of management accounting in higher education institutions from China National Knowledge Infrastructure (CNKI) and Web of Science. The research findings reveal that both domestic and international studies in this field show a growing trend. Domestic research started slightly earlier and entered a rapid growth phase after 2015, while international research has been continuously increasing since 2015. The research themes primarily focus on university financial management, management accounting applications, budget management, and performance evaluation, covering dimensions such as fundamental exploration and budget management practices, system construction and innovative tool applications, informatization and financial transformation driven by technology, and deepened development of performance evaluation under systematic perspectives.

Meanwhile, this paper identifies current research gaps, including insufficient research on the integration pathways between emerging technologies and management accounting, the need for improvement in performance evaluation systems, and the lack of differentiated research across different types of universities. It proposes a future research agenda including: deepening innovative applications driven by technology, improving differentiated performance evaluation systems, expanding application research for specific types of universities, and advancing collaborative research between management accounting systems and university governance. The aim is to provide directional guidance for in-depth research development in this field and offer theoretical support and practical reference for universities to enhance their financial management levels.

Keywords: management accounting, higher education, bibliometric analysis, university financial management, performance evaluation

INTRODUCTION

In recent years, with the continuous deepening of China's educational system reform, universities are facing unprecedented opportunities and challenges (Othman et al., 2023). Against the backdrop of adjustments to fiscal allocation mechanisms, expansion of institutional autonomy, and intensified market competition, universities' financial management models urgently need to transform from traditional accounting-oriented approaches to management-oriented ones (Yang, 2014). Management accounting, as a tool capable of providing decision support, planning control, and performance evaluation for internal organizational management, has been widely applied in the corporate sector and achieved significant results (Yildirim & Dalkılıç, 2023). The state also places high importance on promoting and applying management accounting in administrative institutions and public service units. The Ministry of Finance has successively issued a series of policy documents such as the "Basic Guidelines for Management Accounting" and "Application Guidelines for Management Accounting," (China's Ministry of Finance, 2020) explicitly proposing to advance the application of management accounting in administrative institutions and public service units to enhance internal management levels and resource allocation efficiency.

As important public institutions, universities' financial management's scientific nature and effectiveness directly relate to the healthy development of education. Introducing management accounting into university management systems has become an important pathway for enhancing university governance capabilities (Chenhall, 2007).

However, compared to enterprises, the application of management accounting in universities is still in the exploratory stage. The non-profit characteristics of universities, their multi-objective nature, and complex business activities present numerous unique challenges for management accounting applications in higher education (Agasisti et al., 2015; Di et al., 2019). For instance, how to align universities' resource allocation with core objectives such as teaching and research, and how performance evaluation systems can balance social benefits with economic benefits all require in-depth research.

During this critical period of university financial management transformation, research on management accounting applications in higher education holds significant theoretical and practical importance (Pedroso & Yasin, 2020). From a theoretical perspective, in-depth exploration of management accounting applications in universities can enrich theoretical research on management accounting in the non-profit sector (Vale et al., 2020). Management accounting theory primarily originates from corporate practice, and applying it to universities—a special type of non-profit organization—requires adaptive adjustments and innovations to the theory, helping to expand the theoretical boundaries of management accounting and providing new perspectives for cross-sector applications of management accounting (Gudowski et al., 2024; Di et al., 2019). From a practical perspective, clarifying the current status, problems, and countermeasures of management accounting applications in universities can provide practical and feasible guidance for university financial management practice. This helps universities optimize resource allocation, improve fund utilization efficiency, strengthen internal control, enhance educational quality and competitiveness, and better respond to challenges brought by educational reform and development.

RESEARCH METHODS

To ensure the comprehensiveness, objectivity, and scientific rigor of this review, standardized bibliometric methods will be employed to systematically review and analyze relevant research literature on management accounting applications in higher education institutions.

Regarding literature sources, considering the specificity and richness of Chinese literature in the field of management accounting applications in domestic universities, as well as the role of international literature in broadening research perspectives, this review selects China National Knowledge Infrastructure (CNKI) and Web of Science as the primary literature databases, facilitating subsequent comparative international analysis.

When conducting searches in CNKI, the keywords used are “management accounting in universities in Mandarin” with no time restrictions. For Web of Science searches, the keywords are "Management Accounting in Higher Education" with the time frame set from 2015 to present. This approach aims to comprehensively cover all research literature related to management accounting applications in higher education, providing a complete presentation of the development trajectory and evolutionary trends in this field.

The analysis methods primarily employ thematic classification and temporal evolution analysis. Thematic classification involves categorizing the retrieved Chinese literature according to research themes. Through systematic classification, the research focus and achievements of different themes are clarified, laying the foundation for subsequent thematic analysis. Temporal evolution analysis involves statistical analysis of literature publication dates, creating research trend charts to intuitively display changes in the number of publications on management accounting applications in higher education across different time periods. This reveals the emergence, development trajectory, and shifts in research hotspots in this field, helping to understand the temporal dynamic characteristics of the research. Through the comprehensive application of these analytical methods, the inherent patterns and characteristics of management accounting application research in higher education are deeply explored.

Research Findings and Thematic Analysis

RESEARCH FINDINGS

Based on the search results from the Web of Science database using "Management Accounting in Higher Education" as keywords with a timeframe from 2015 to present (Figure 1), the number of related publications

from 2015-2025 demonstrates an overall increasing trend. The publication volume was 429 articles in 2015, followed by gradual annual increases, reaching 1,223 articles in 2020 and further expanding to 1,857 articles in 2024, with 1,030 articles already published in 2025 to date. This trend reflects the growing international research attention on management accounting in higher education, particularly showing a pronounced growth pattern in recent years.

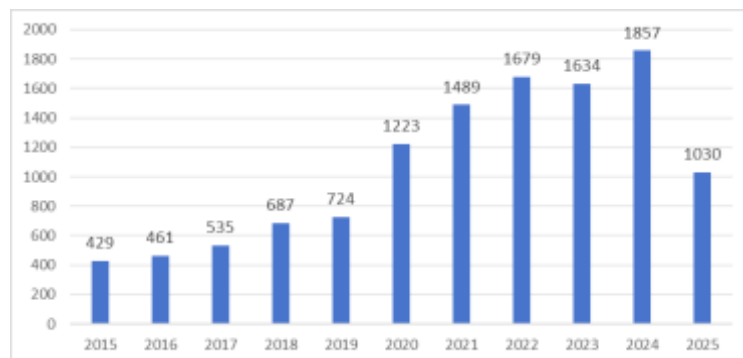


Figure 3.1 Global Research Publication Trends in Management Accounting in Higher Education (2015-2025)

Source: Website of Science (2025)

The distribution of research publications by country in Web of Science (Figure 2) reveals that China leads in the number of research publications in this field with 3,886 articles, significantly surpassing other countries. The United States ranks second with 2,122 publications, followed by the United Kingdom, Germany, Australia, India, Spain, Japan, Brazil, and Malaysia with 946, 828, 801, 702, 664, 633, 615, and 606 publications respectively. This distribution indicates that China has demonstrated particularly robust research output in university management accounting-related studies, while also reflecting the international landscape of research activity in this field.

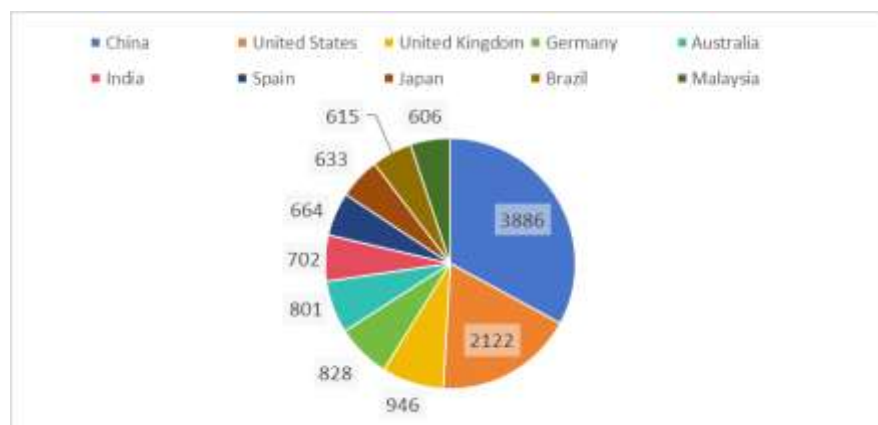


Figure 3.2 Number of Related Research Publications by Country in Web of Science

Source: Website of Science (2025)

A parallel analysis of Chinese domestic research patterns provides additional insights into this development trajectory. CNKI (China National Knowledge Infrastructure) database search results using "Management Accounting in Higher Education" (in Chinese) as keywords with no time restrictions (Figure 2.3) reveal distinct developmental phases from 1994 to 2024. The period from 1994 to 2010 showed limited research activity with fewer than 10 publications annually, indicating an emerging research field. However, a significant acceleration occurred after 2011, with publications increasing to 86 in 2015, 152 in 2018, and reaching 173 in 2020, before stabilizing at relatively high levels despite some fluctuations. This evolutionary pattern reflects the transition of domestic management accounting research in higher education from a nascent stage to rapid development, closely aligning with China's educational system reforms and the evolving financial management demands of

universities.

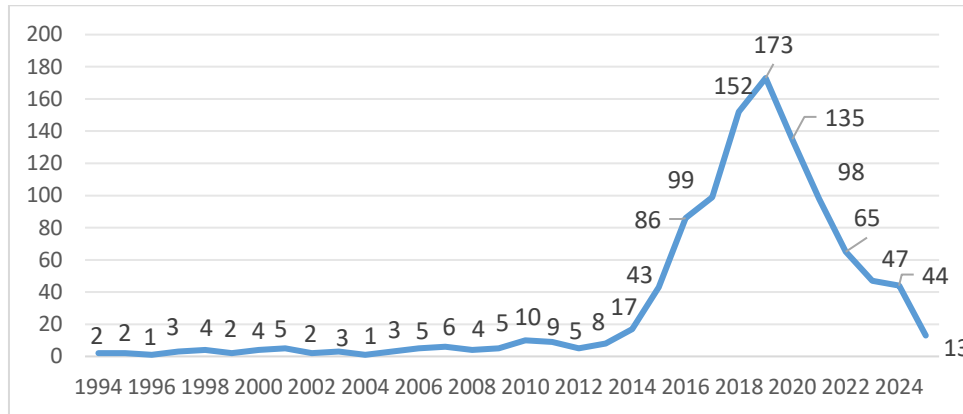


Figure 3.3 Evolution of Management Accounting Research in Chinese Higher Education: CNKI Publication Analysis (1994-2024)

Source: CNKI (China National Knowledge Infrastructure) (2025)

The distribution of primary themes (Figure 4) reveals that among related research, "University Financial Management" accounts for the highest number of publications with 253 articles. "Financial Management," "University Finance," and "Management Accounting Applications" also occupy prominent positions with 149, 68, and 57 articles respectively. Additionally, themes such as "Teaching Reform," "University Management," and "Accounting Talent Development" also demonstrate considerable research attention, with publication numbers ranging from 25-52 articles. This distribution indicates that current research primarily centers on core themes of university financial management and management accounting applications, while also addressing related aspects including teaching, management, and talent development.

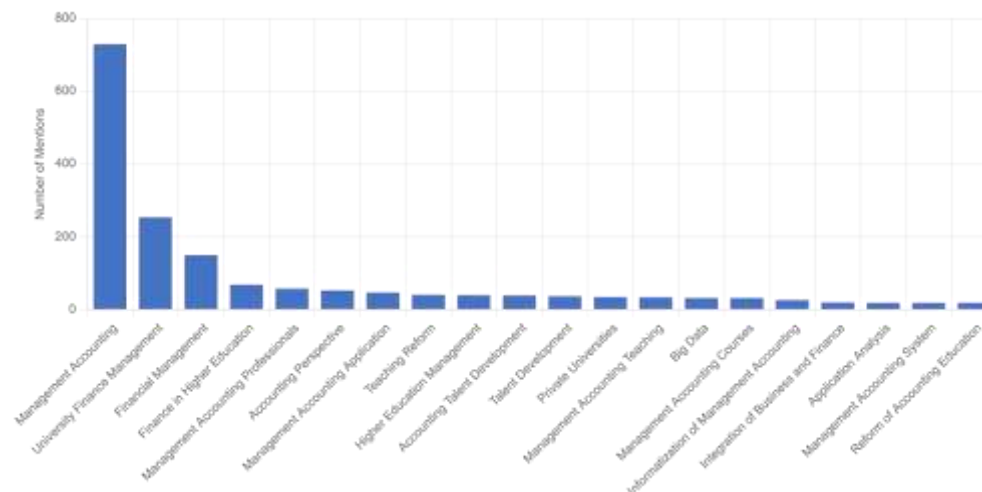


Figure 3.4 Distribution of Main Themes

Source: CNKI (China National Knowledge Infrastructure) (2025)

The distribution of primary themes (Figure 3.4) reveals that among related research, "University Financial Management" accounts for the highest number of publications with 253 articles. "Financial Management," "University Finance," and "Management Accounting Applications" also occupy prominent positions with 149, 68, and 57 articles respectively. Additionally, themes such as "Teaching Reform," "University Management," and "Accounting Talent Development" also demonstrate considerable research attention, with publication numbers ranging from 25-52 articles. This distribution indicates that current research primarily centers on core themes of university financial management and management accounting applications, while also addressing related aspects including teaching, management, and talent development.

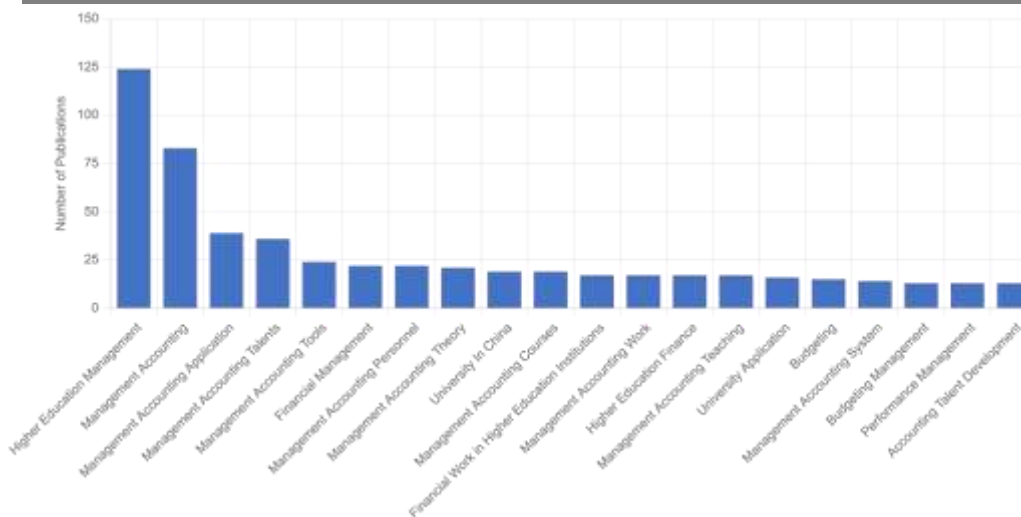


Figure 3.5 Distribution of Secondary Themes

Source: CNKI (China National Knowledge Infrastructure) (2025)

Thematic Analysis

Foundational Exploration and Budget Management Practices in University Management Accounting

Research on university management accounting in China originated with Zhang's (1994) pioneering exploration, which first explicitly proposed the necessity of introducing management accounting into universities, laying the foundation for subsequent research. Early studies centered on fundamental applications and budget management. Zhang & Guo (2001) focused on comprehensive financial planning, advocating for the integration of fixed budgets, flexible budgets, and other methods to construct a budget system covering diversified funding sources, emphasizing the linkage between budgets and strategic objectives. Ma & Wang (2001) addressed logistics socialization reforms by proposing the establishment of responsibility centers (such as catering and property management), utilizing target costing methods and performance evaluation to enhance service efficiency and promote market-oriented transformation of logistics management. Yang & Li (2004) explored the fundamental functions of management accounting in university financial management, advocating for strengthened internal management through planning, forecasting, and control, while establishing risk prevention mechanisms.

In the budget management domain, Zhao (2005) conducted in-depth research on zero-based budget preparation, distinguishing fixed and variable costs based on cost behavior analysis to avoid the "incremental base" drawbacks of traditional budgeting. Wang & Zhang) identified issues in university budgeting including goal confusion and strategic disconnection, proposing the construction of a closed-loop system of "preparation-execution-evaluation" to strengthen the linkage between budgets and performance. Zhou & Wang (2017) further advocated for zero-based budgeting as the primary approach, combined with project prioritization based on strategic objectives to ensure resource allocation toward teaching and research, while implementing dynamic adjustment mechanisms through execution analysis. Song & Zhang (2007) extended management accounting methods to overall financial management, proposing the introduction of zero-based budgeting in budget preparation and net present value methods in investment decisions to form a comprehensive management loop. Jiang (2009) focused on cost behavior analysis, decomposing educational costs into fixed costs (such as retirement wages) and variable costs (such as scholarships and grants) to provide quantitative foundations for resource allocation. Han & Guo (2010) addressed the characteristics of private universities, proposing the use of cost-volume-profit analysis to determine enrollment break-even points and responsibility accounting to delineate accounting authority, balancing educational benefits with public welfare objectives.

Management Accounting System Development and Innovative Tool Applications

System development represents a core issue in the application of management accounting in universities. Sun (2017) systematically analyzed existing problems including inadequate governance structures, lagging internal

controls, singular tool applications, and talent shortages, proposing solutions such as establishing chief accountant positions, introducing rolling budgets and balanced scorecards, and constructing multidimensional performance systems. Chen et al. (2018) supplemented this by highlighting the need to address the disconnect between theory and practice, suggesting improvements in financial personnel competency through case database development and university-enterprise training programs. Du (2014) emphasized the importance of aligning with universities' non-profit characteristics to construct an integrated system encompassing cost management, risk control, and decision support. Qiao (2014) analyzed the complexity of university accounting and finance, identifying challenges in educational cost accounting to provide theoretical reference for system development. Mao (2015) approached from a practical perspective, advocating for breakthrough applications in investment decision-making and human resource optimization through case accumulation and theoretical innovation.

Regarding tool innovation and specific domain applications, Lun & Fu (2016) explored multi-tool applications, proposing the use of standard costing methods to calculate per-student training costs, net present value methods for infrastructure project evaluation, and cost-volume-profit analysis for enrollment scale decision-making. Dan & Li (2016) advocated for detailed teaching and research cost analysis through target costing and activity-based costing methods, establishing responsibility centers to achieve comprehensive control. Han (2017) focused on research funding management, proposing financial personnel participation in budget preparation, utilizing information systems for full-process tracking, and extracting implicit indicators through big data to address the problem of "emphasizing application over management". Tian (2016) innovatively integrated social responsibility, constructing a stakeholder value-oriented system that incorporates environmental costs and community service expenditures into budgeting. Xia & Du (2017) employed SWOT analysis to systematically examine internal and external factors for universities in developing management accounting, proposing SO and WO combination strategies to provide pathways for differentiated development.

Technology-Driven Management Accounting Informatization and Financial Transformation

The advancement of information technology has brought new transformations to the application of management accounting in universities. Shao (2016), in his reflection on promoting management accounting in the new era, proposed leveraging cloud computing technology to integrate personnel, financial, and material information, establishing a strategy-oriented budget performance management system to enhance the precision of decision support. Furthermore, in his research on the "Internet+" era, he pointed out that the focus of financial work is shifting from traditional accounting to management accounting, and universities should construct financial shared service platforms to break down "information silos" among financial, academic affairs, and research departments, achieving real-time data interoperability. Li (2015) focused on the implementation path of management accounting informatization, identifying current issues in universities such as lack of overall planning and insufficient professional talent, suggesting measures including developing informatization blueprints, cultivating interdisciplinary talents with both accounting and IT capabilities, and establishing financial shared service centers to promote deep integration between management accounting and information technology. Jin & Chen (2014), using higher art institutions as an example, analyzed the impact of big data technology on budget management, advocating for dynamic budget adjustments through real-time data processing to enhance resource allocation efficiency.

In the context of financial transformation, Xu & Dong (2019) reviewed the historical evolution of university management accounting, noting its development from a mere accounting tool to a strategic support mechanism, highly aligned with financial transformation objectives. Mao (2020) explored financial transformation in universities in the new era, emphasizing that management accounting should serve as the core, enhancing the strategic value of financial management through talent development and technological innovation. Liu (2019) proposed that for "Double First-Class" universities, financial transformation should focus on resource optimization and risk management, with management accounting tools serving as key support for achieving transformation. Zha & Liu (2019) found through surveys that university management accounting applications face issues such as limited scope and singular tools, recommending institutional improvement and enhanced training to deepen applications. Wang (2018) constructed a competency framework for financial personnel transformation, requiring financial staff to possess management accounting thinking and cross-disciplinary capabilities to meet transformation demands.

Performance Evaluation and Systematic Development Under Holistic Perspectives

Performance evaluation, as a core component of management accounting, has been continuously refined in university applications. Xue (2021) focused on specialized fund performance evaluation, comprehensively applying balanced scorecards and key performance indicator methods to construct an indicator system from four dimensions: financial, customer, internal processes, and learning & growth. Through analytic hierarchy process for weight determination, this approach achieved the expansion of performance evaluation from single financial indicators to multi-objective frameworks. Liu (2021) proposed from a management accounting perspective that provincial universities should integrate cost control with performance evaluation, establishing indicators such as cost saving rates and budget execution rates, linking evaluation results with budget allocation to form a closed-loop mechanism of "assessment-feedback-improvement". Zhou (2019) explored the application of management accounting tools in performance evaluation, emphasizing the need to adjust indicator weights according to university strategies, such as increasing distinctive indicators like disciplinary development contribution rates to enhance evaluation relevance.

Systematic thinking has provided methodological guidance for the deepened application of management accounting. Qiao (2024) pointed out that comprehensive deepening reforms in university financial domains require coordinated integration of management accounting with budgeting, auditing, asset management, and other areas, avoiding "isolated advances" and forming management synergy through institutional alignment and process integration. Wang (2023) proposed under the context of high-quality development that systematic thinking should be applied to integrate management accounting tools, combining performance evaluation with strategic planning and value chain analysis to transform from "efficiency improvement" to "value creation," such as using economic value added to assess the long-term benefits of disciplinary development investments. These studies have promoted the evolution of university management accounting from scattered applications toward systematic coordination, providing robust support for high-quality development in higher education.

DISCUSSION AND RESEARCH GAPS

Discussion

From the temporal distribution of research literature, both domestic and international studies on university management accounting demonstrate pronounced growth trends. Internationally, related literature in the Web of Science database has continuously increased since 2015, reaching substantial volumes by 2024, reflecting growing global attention to university management accounting applications, potentially related to funding pressures and governance optimization demands facing higher education worldwide. Domestic research began slightly earlier, with CNKI literature data showing relatively slow early progress, followed by rapid growth after 2015. This pattern aligns with the advancement of domestic management accounting policies and urgent demands for university financial management transformation, reflecting the catalytic effect of policy guidance and practical needs on academic research. Regarding research themes, both primary and secondary topics center on university financial management, management accounting applications, management accounting theory, budget management, and performance evaluation. This indicates that university management accounting research closely integrates with actual university financial management work, focusing on specific application scenarios and practical value of management accounting in universities, such as optimizing resource allocation through budget management and enhancing management efficiency via performance evaluation. Simultaneously, this reflects the expansion of research from basic financial management toward more refined management accounting tools and system development, gradually forming a multi-dimensional, multi-layered research landscape.

Research Gaps

Despite achievements in university management accounting research, several gaps remain. Regarding research depth, while existing studies address numerous aspects of management accounting, some specialized domains require further investigation. In management accounting informatization, research on specific pathways for deep integration of emerging technologies such as big data and artificial intelligence with university management accounting, challenges faced, and solutions remains insufficiently systematic and thorough, mostly remaining at

preliminary exploratory stages, lacking actionable practical cases and mature theoretical frameworks. In performance evaluation, although existing research has constructed various evaluation indicator systems, insufficient attention has been given to balancing universities' social and economic benefits and effectively applying evaluation results to resource allocation and strategic adjustments. Current evaluation systems often emphasize financial indicators or partially quantifiable metrics, inadequately addressing difficult-to-quantify aspects such as talent development quality and research innovation potential, resulting in incomplete comprehensiveness and scientific rigor in performance evaluation. Furthermore, differentiated research on management accounting applications across different university types (such as private versus public universities, research-oriented versus application-oriented institutions) remains limited. Different university types exhibit significant variations in educational objectives, funding sources, and management models, necessitating correspondingly different management accounting application needs and suitable models. However, current research lacks sufficient attention to these differences, making it difficult to provide targeted theoretical guidance and practical recommendations.

Future Research Agenda

Deepening Research on Technology-Driven Management Accounting Innovation Applications

Addressing current deficiencies in management accounting informatization research, future studies should focus on exploring the deep integration of emerging technologies such as big data, artificial intelligence, and cloud computing with university management accounting. On one hand, research should investigate how to utilize big data technology to construct university financial data platforms, achieving real-time interoperability and deep mining of teaching, research, administrative, and financial data to provide precise data support for resource allocation and risk early warning. On the other hand, exploration should focus on artificial intelligence applications in university budget preparation and cost accounting, such as implementing dynamic budget adjustments and automatic calculation of per-student training costs through intelligent algorithms. Additionally, attention must be given to issues of data security and system compatibility during technology implementation, proposing feasible solutions and developing comprehensive technology application frameworks.

Improving Differentiated Performance Evaluation and Application System Research

Addressing issues of singular indicators and insufficient benefit balancing in performance evaluation, future research should construct more systematic and differentiated performance evaluation systems. First, research should investigate how to incorporate difficult-to-quantify social benefit indicators (such as talent development quality's contribution to regional economy and research outcome transformation potential) into evaluation systems, achieving scientific quantification through methods such as analytic hierarchy process and fuzzy comprehensive evaluation. Second, differentiated evaluation indicator weights should be designed based on different university types' characteristics—for example, private universities could appropriately increase the weight of fund utilization efficiency indicators, while research universities should strengthen the proportion of research innovation indicators. Third, in-depth exploration of linkage mechanisms between performance evaluation results and resource allocation, personnel assessment, and other processes should ensure evaluation results truly serve universities' strategic development.

Expanding Management Accounting Application Research for Specific University Types

Addressing insufficient research on management accounting applications across different university types, future studies should strengthen focused research on specific groups such as private universities, application-oriented universities, and vocational colleges. For private universities, research should focus on how to balance educational public welfare with operational sustainability through management accounting tools (such as cost-volume-profit analysis) under predominantly self-funded backgrounds. For application-oriented universities, studies should investigate how to integrate management accounting with distinctive operations such as industry-education integration and university-enterprise cooperation to improve practical teaching resource allocation efficiency. For vocational colleges, research should explore cost management models and performance evaluation methods aligned with skill-based talent development patterns, promoting better service of management accounting to differentiated development needs of various university types.

Advancing Collaborative Research Between Management Accounting Systems and University Governance

From a systematic perspective, research should investigate collaborative mechanisms between management accounting systems and university governance structures. Exploration should focus on how to integrate management accounting tools such as strategic budgeting and balanced scorecards into university governance processes—for example, incorporating management accounting analysis reports into university decision-making committees to enhance decision-making scientific rigor. Research should examine integration pathways between management accounting and auditing, asset management, internal control, and other systems, forming comprehensive management synergy covering university operational processes. Furthermore, aligned with university governance modernization requirements, research should explore management accounting applications in university governance effectiveness evaluation, providing new perspectives and methods for enhancing overall university governance levels.

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